

Application No. 09/643,800  
Response to Office Action

Customer No. 01933

Listing of Claims:

1. (Currently Amended) An electronic camera comprising:  
an image sensing unit for electronically sensing an object  
image and outputting image data of the object image;

a memory unit for storing the image data output from said  
5 image sensing unit;

an image processing unit for performing predetermined image  
processing based on the image data stored in said memory unit;

an interpolation calculation circuit for interpolating a  
pixel whose data is not present in the image data after said  
10 image processing by said image processing unit by interpolation  
calculation based on an approximate expression including a  
polynomial of at least 3rd-order, and writing the image data  
after interpolation in said memory unit, said interpolation  
calculation circuit comprising:

15 a calculation section for calculating an interpolation  
position of a pixel;

an interpolation coefficient table which includes a  
plurality of interpolation coefficients;

20 a correction section for correcting the interpolation  
position so as to correspond to one of the interpolation  
coefficients; and

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an interpolation calculation section for interpolating the pixel using the interpolation coefficient for the corrected interpolation position;

25           a display unit for displaying the image data after interpolation; and

          a recording unit for recording the image data after interpolation on a recording medium.

2. (Currently Amended) A camera according to claim 1, further comprising a compression/expansion unit for at least one of compressing the image data after image processing ~~or~~ and expanding the image data read out from said recording unit.

3. (Currently Amended) A camera according to claim 1, wherein the interpolation calculation is a convolution calculation based on an approximate expression including a 3rd-order ~~(cubic)~~ polynomial.

4. (Original) A camera according to claim 1, wherein said memory unit has a memory area dedicated for the interpolation calculation by said interpolation calculation circuit.

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5. (Original) A camera according to claim 1, further comprising a dedicated memory unit used for the interpolation calculation by said interpolation calculation circuit.

Claim 6 (Canceled).

7. (Currently Amended) A camera according to claim 1, wherein said image sensing unit comprises a single image sensing element ~~(single CCD)~~ to which an optical filter having an RGB color coating is attached.

8. (Currently Amended) A camera according to claim 7, further comprising a color separation unit for separating pixels in units of RGB color components based on a form of the color coating of said image sensing element to generate a  
5 plurality of pixel planes of the RGB color components from one pixel plane, and

wherein said interpolation calculation circuit interpolates ~~the pixel whose data~~ which is not present in the pixel planes of the RGB color components.

9. (Currently Amended) A camera according to claim 1, wherein the image processing includes enlargement and reduction of an image, and

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wherein said interpolation calculation circuit interpolates  
5 the pixel ~~whose~~ data which is not present in the enlarged or  
reduced image.

10. (Original) A camera according to claim 9, wherein the  
enlargement/reduction image processing is individually performed  
for a display image to be supplied to said display unit and a  
recording image to be supplied to said recording unit.

11. (Currently Amended) A camera according to claim 7,  
wherein the image processing includes thinning of predetermined  
pixels and format conversion based on a sum of the predetermined  
pixels, and  
5 wherein said interpolation calculation circuit interpolates  
the pixel ~~whose~~ data which is not present in the image after the  
format conversion.

12. (Currently Amended) A camera according to claim 1,  
further comprising an address control unit for controlling a  
write address in writing the image data processed by said image  
processing unit in said memory unit,  
5 wherein said address control unit ~~overwriting~~ overwrites a  
part of the image data ~~on part of image data~~ which has already  
been written.

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13. (Original) A camera according to claim 12, wherein said address control unit controls an offset address from a start address of a storage area of said memory unit.

14. (Original) A camera according to claim 1, further comprising at least one of an automatic focus control unit and an automatic exposure unit, and

5 wherein said interpolation calculation circuit executes the interpolation calculation when said automatic focus control unit and said automatic exposure unit are in an inoperative state.

15. (Currently Amended) A camera according to claim 1, further comprising an image sensing mode setting unit for setting ~~an one of a plurality of~~ image sensing ~~mode~~ modes, and

5 wherein ~~whether~~ execution of the interpolation calculation by said interpolation calculation circuit is ~~enabled/disabled is determined in correspondence with~~ enabled and disabled based on the image sensing mode set by said image sensing mode setting unit.

16. (Currently Amended) A camera according to claim 15, wherein the image sensing ~~mode settable by said image sensing~~

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~~mode setting unit includes~~ modes comprise a still image sensing mode and a moving/still image sensing mode, and

5        ~~wherein only when the still image sensing mode or the moving/still image sensing mode is set,~~ the interpolation calculation by said interpolation calculation circuit is performed only when one of the still image sensing mode and the moving/still image sensing mode is set.

17. (Currently Amended) A camera according to claim 1, further comprising an image quality mode setting unit for setting an image quality mode of the sensed image, and

5        ~~wherein only when the image quality mode with a variable image size is set,~~ the interpolation calculation by said interpolation calculation circuit is performed only when an image quality mode corresponding to a variable image size is set.